F07 HEAVY METAL CONCENTRATIONS AND CONDITION OF BALTIC FISHES

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Abundant Baltic fish species, as Baltic herring (*Clupea harengus membras*), smelt (*Osmerus eperlanus*), pike (*Esox lucius*), eelpout (*Zoarces viviparus*), three-spined stickleback (*Gasterosteus aculeatus*), four-horned sculpin (*Myoxocephalus quadricornis*), bullrout (*M. scorpius*), perch (*Perca fluviatilis*), ruffe (*Gymnocephalus cernuus*), flounder (*Platichthys flesus*), and turbot (*Psetta maxima*) were sampled from various coastal parts of mainly the Northern Baltic Sea, for investigations on metal concentrations in various tissues and organs, and the physiological condition of the fishes.

The metals concentrated upon are mainly mercury (Hg), cadmium (Cd), zinc (Zn), and copper (Cu). Besides the metal concentrations in muscle tissue (dorso-ventral part), organs as liver, kidneys, and gonads (of both sexes separately) were focused upon. The physiological condition of the fishes was determined by calculations of condition factors (CF, and CC), and the somatic indexes for liver (LSI), and the gonads (GSI) respectively. Observations on food organisms, diseases and parasites completed the examination of health condition of the fishes.

There was no significant temporal decrease or increase of Hg concentrations in the muscle tissues of smelt, four-horn sculpin, and flounder (Gulf of Finland). The concentrations of Hg are higher in fishes from inshore waters compared to fishes from the open sea.

Statistically significant negative correlations between the condition factors (CF, CC), and concentrations of Hg and Cd in muscles, liver and gonads, have in some cases found, especially in eelpout and flounder, indicating sub-lethal effects of these metals.